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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,140	06/16/2006	Ulrich Steinbrenner	290548US0PCT	1803

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EXAMINER	
PARSA, JAFAR F	

ART UNIT	PAPER NUMBER
1621	

NOTIFICATION DATE	DELIVERY MODE
08/05/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/583,140	STEINBRENNER ET AL.	
	Examiner	Art Unit	
	Jafar Parsa	1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/26/2007 & 6/16/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "C_1-C_{16}-olefin" in claim 6 renders the claim indefinite. Olefin requires at least two carbon atoms. Therefore C_1, which refers to only one carbon atoms can not form a double bond, at least needed two carbon atoms to have an olefin, the simplest olefin is ethylene.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maas et al (US 2004/0010161) or Narbeshuber et al (US 2004/0030209 A1) in view of Scheibel et al (USPN 6,566,319)

Applicants claimed invention is directed to a process for the preparation of alkylaryl compounds comprising: a) reacting a C_4/C_5-olefin mixture over a metathesis catalyst to prepare a C_{4-8}-olefin mixture comprising 2-pentene, and optionally removing the C_{4-8}-olefin mixture, b) removing from 5 to 100% of the 2-pentene present in stage a) and subsequently reacting over an isomerization catalyst to give a mixture of 2-pentene and 1-pentene which is returned to stage a), c) dimerizing the C_{4-8}-olefin mixture obtained in stage b) following removal in the presence of a dimerization catalyst to give a mixture containing C_{8-16}-olefins, removing these C_{8-16}-olefins and optionally removing a partial stream thereof, d) reacting the C_{8-16}-olefin mixtures obtained in stage c) or the partial stream with an aromatic hydrocarbon in the presence of an alkylation catalyst to form alkyl aromatic compounds where, prior to the reaction, 0 to 60% by weight, based on the C_{8-16}-olefin mixtures obtained in stage c), of linear olefins may additionally be added, e) optionally sulfonating the alkyl aromatic compounds obtained in stage d) and neutralizing to give alkylarylsulfonates, where, prior to the sulfonation, 0 to 60% by weight, based on the alkyl aromatic compounds obtained in stage d), of linear alkylbenzenes may additionally be added if no admixing has taken place in stage d), and f) optionally mixing the alkylarylsulfonates obtained in stage e) with 0 to 60% by weight, based on the alkylarylsulfonates obtained in stage e), of linear alkylarylsulfonate, if no admixing has taken place in stages d) and e).

Maas teaches a process for the preparation of alkylarylsulfonates by

a) reaction of a C.sub.4-olefin mixture over a metathesis catalyst for the preparation of an olefin mixture comprising 2-pentene and/or 3-hexene, and optional removal of 2-pentene and/or 3-hexene, b) dimerization of the 2-pentene and/or 3-hexene obtained in stage a) over a dimerization catalyst to give a mixture containing C_{10-12}-olefins, and optional removal of the C_{10-12}-olefins, c) reaction of the C_{10-12}-olefin mixtures obtained in stage b) with an aromatic hydrocarbon in the presence of an alkylating catalyst to form alkylaromatic compounds, where, prior to the reaction, additional linear olefins may be added, d) sulfonation of the alkylaromatic compounds obtained in stage c), and neutralization to give alkylarylsulfonates, where, prior to the sulfonation, linear alkylbenzenes may additionally be added, e) optional mixing of the alkylarylsulfonates obtained in stage d) with linear alkylarylsulfonates. See abstract.

Mass teaches that the metathesis catalyst is selected from compounds of a metal of group VIb, VIIb or group VIII of the periodic Table of elements. See paragraph 0027 and 0031. Mass teaches that it is imperative to achieve the correct degree of branching and/or the correct degree of mixing. Too much branching adversely affects the biodegradability of the products. Products which are too linear have a negative effect on the viscosity and the solubility of the sulfonates. The prior art discloses a degree of branching of from 0.8-2. See paragraph 003 and 0012. Mass discloses that C4-olefin mixture fed to the dimmerization reactor have overlapping composition with respect to claim 5.

Narbeshuber also teaches a process for preparing alkylarylsulfonates. The preparation of alkylaryl compounds takes place by 1) preparation of a mixture of, on statistical average, predominantly monobranched C_{10-14}-olefins by a) reaction of a C_4-olefin mixture over a metathesis catalyst for the preparation of an olefin mixture comprising 2-pentene and/or 3-hexene, and optional removal of 2-pentene and/or 3-hexene, followed by dimerization of the resulting 2-pentene and/or 3-hexene over a dimerization catalyst to give a mixture comprising C_{10-12}-olefins, and optionally removal of the C_{10-12}-olefins, or b) extraction of predominantly monobranched paraffins from kerosene cuts and subsequent dehydrogenation, or c) Fischer-Tropsch synthesis of olefins or paraffins, where the paraffins are dehydrogenated, or d) dimerization of shorter-chain internal olefins, or e) isomerization of linear olefins or paraffins, where the isomerized paraffins are dehydrogenated, 2) reaction of the olefin mixture obtained in stage 1) with an aromatic hydrocarbon in the presence of an alkylation catalyst which contains zeolites of the faujasite type. See abstract.

The references cited above in general teaches the isomerization of linear olefins or paraffins, where the isomerized paraffins are dehydrogenated. The instant claims require isomerizing 2-pentene to give a mixture of 2-pentene and 1-pentene. However, Scheibel in a process for preparing alkylarylsulfonate teaches that it is desirable to use single alpha-olefin mixtures, such as 1-pentene and 1-hexene in the dimmerization reaction. Highly combination of alpha-olefins are preferred. See col. 13, lines 19-25 and Examples.

Scheibel teaches alkylation of olefins comprising C5-c15-olefin in alkylation steps results in particularly superior modified alkylsulfonate surfactant. See col. 6, lines 29-48. It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to use the combination of teachings provided by Maas and/or Narbeshube further in view of Scheibel to arrive at superior modified alkylsulfonate surfactant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 10 is rejected under 35 U.S.C. 102(a) as being anticipated by Maas et al (US 2004/0010161) or Narbeshuber et al (US 2004/0030209 A1) or Scheibel et al (USPN 6,566,319)

Scheibel discloses a detergent comprising alkylarylsulfonate. See Examples.

Claim 10 is a product-by-process claim.

PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-

process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jafar Parsa whose telephone number is (571)272-0643. The examiner can normally be reached on 9 a.m.-5:30 p.m. (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bonnie Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jafar Parsa/
Primary Examiner, Art Unit 1621